



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,609	07/16/2003	Kurt Plotz	032745-037	6540

7590 08/24/2004

BURNS, DOANE, SWECKER & MATHIS, L.L.P.  
P.O. Box 1404  
Alexandria, VA 22313-1404

EXAMINER
----------

TORRES VELAZQUEZ, NORCA LIZ

ART UNIT	PAPER NUMBER
----------	--------------

1771

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/619,609

Applicant(s)

PLOTZ, KURT

Examiner

Norca L. Torres-Velazquez

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 28 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-16,33 and 34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-16,33 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/619,529.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-5, 9, 10, 13-16 and 32 rejected over Hiers ('876) in view of Nieminen et al. ('960) have been considered but are moot in view of the new ground(s) of rejection.

a. Applicants argue that the Hiers '876 reference does not disclose or suggest an article of manufacture as presently claimed where needling is performed in such a manner that a portion of the organic fibers passes completely through the glass fiber layer, penetrates the surface thereof and lies adjacent thereto.

In this office action the Examiner provides US 6,092, 622 to Hiers et al. that teaches a modified needling technique to that of the '876 patent and produces tufts of the organic fibers protruding through the carrier. The '622 patent discloses that their invention provides a needled batt similar to that of the Hiers patent '876, but where the needling has been modified to provide tufts on opposite surfaces of the needled batt. (Col. 7, lines 33-36)

### ***Claim Objections***

2. Objection to claim 12 has been withdrawn in view of Applicant's amendment.
3. Claims 3 and 4 are objected to because of the following informalities: the claims recite "said organic fibers". For proper antecedent basis it should recite - - said organic synthetic fibers - -. The Examiner assumes this was a typographical error. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1, 3-5, 9, 11-12, 15, 16 and 32 are rejected under 35 U.S.C. 102(e) as being anticipated by HIERS et al. (US 6,092,622) and further evidenced by HIERS et al. (US 4,522,876).

HIERS et al. discloses a flexible, thermal and acoustical insulating shield that has a needled, flexible, fibrous batt (40) and an insulating layer (43) of insulating fibers (44) disposed between opposite binding layers (41, 42) of binding fibers (45). The binding fibers of each binding layer are needledly disposed through the insulating layer and an opposite binding layer

to provide tufts (46) of binding fibers protruding from the opposite binding layer so as to form a tufted upper surface. (Abstract) The reference discloses that the tufts lock the binding fiber (in the form of stitches) such that those stitches cannot pull through the composite upon high static or dynamic loading in the Z direction of the batt. The presence of the tufts greatly increases the Z-directional strength of the needled batt, but the needling still leaves the batt very flexible, so that the batt can be easily bent to desired configurations. (Col. 7, lines 50-58) The reference teaches the use of glass fibers as the insulating fibers and the use of organic fibers such as polyester fibers and polyolefin fibers as the binding fibers. (Col. 9, lines 13-25) The reference further teaches the use of polyester adhesive applied to the batt by spraying or coating, the reference also teaches the use of acrylate adhesives. (Col. 9, lines 56 through Col. 10, lines 1-5)

It is the Examiner's interpretation of the reference that the fibrous batt of organic synthetic fibers of HIRS et al. equates to the nonwoven mat of the present invention, the insulating layer of glass fibers equates to the presently claimed fiberglass mat. The tufts of binding fibers protruding in the form of stitches from the opposite binding layer of HIRS et al. are equated to the organic fibers that penetrate through the fiberglass mat and lie adjacent to a side of the fiberglass-containing mat that is opposite to the organic nonwoven mat of the present invention. It is noted that while the Hirs et al. reference uses a third layer to sandwich the fiberglass mat, it is the Examiner's position that the claim language is open-ended and the inclusion of that layer is not precluded. Further, with regards to the location of the organic fibers penetrating through the fiberglass mat, it is noted that it is the Examiner's position that these fibers penetrate and lie to the side opposite to the organic nonwoven mat. It is further noted, that the '622 reference discloses that their invention provides a needled batt similar to that of the '876

Art Unit: 1771

patent, but where the needling has been modified to provide tufts on opposite surfaces of the needled batt. Therefore, it is the Examiner's position that a two layer batt such as that disclosed in the '876 reference (Fig. 1) would be conceived in the Hiers et al. '622 reference. With regards to the one or more layers coated, the Examiner equates the coated adhesive layer of HIERS et al. to this limitation. The reference further teaches that the fiber length of the binding fibers will normally be between about 0.2 and 8.0 inch. (Col. 9, lines 32-35) With regards to claim 3 that claims that the organic fibers are polypropylene fibers, it is the Examiner's position that the olefin fibers disclosed by HIERS include polypropylene since an olefin fiber is a synthetic long-chain polymer fiber composed of at least 85% by weight of ethylene, propylene, or other crystalline polyolefins, (as defined in Hawley's Condensed Chemical Dictionary, Twelfth Edition, p.852). With regards to claim 5, it is noted that a manufactured staple fiber includes fibers with lengths from 8 inches down to about 1 inch, therefore HIERS teachings read on the claimed staple fiber mat.

With regards to the limitations requiring the organic synthetic fibers in the nonwoven mat to be thermally fixed, it is noted that the HIERS et al. reference teaches that these procedure is used to consolidate the mat improving the strength. (Refer to Col. 3, lines 10-14)

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over HIERS et al. ('622) as applied above, and further in view of HIERS (US 4,522,876).

HIERS et al. ('622) fails to disclose that the organic synthetic fibers nonwoven mat is pre-consolidated. It is further noted that while HIERS et al. teach the use of glass fibers, it fails to specify that these include E, C class or ECR glass.

HIERS ('876) discloses an integral textile composite fabric having at least one organic textile fiber layer of needled textile organic fibers and at least one glass fiber layer. (Column 1, lines 6-8) HIERS, further teaches that the organic fiber layer and the glass fiber layer are needled from laid fibers. With regards to the claimed fiberglass containing mat consolidated with a binder, it is noted that the reference teaches that the needled layers are laid layers and are to be distinguished from previously substantially consolidated (non-laid) layers, e.g. layers which may have been substantially consolidated by use of adhesives, thermal bonding and the like. This does not mean, however, that there can be no previous consolidation of the laid layers. For example, commercially available glass fiber batts may have a small amount of resin binder therein in order to provide sufficient strength for handling purposes. (Column 5, lines 40-50) It is the Examiner's interpretation of the reference's teachings that using a resin binder in glass fiber batt to provide sufficient strength during handling reads on the presently claimed fiberglass containing mat consolidated with a binder.

The glass fibers may be any of the conventional glass fibers: C-glass fibers, S-glass fibers, and E-class fibers, among others. (Column 6, lines 63-65) The needled fabric may be sized or coated or filled or impregnated in a variety of manners. It teaches the use of polyethylene, acrylic and polyester coatings and also that it may be impregnated with a resin.

(Column 11, lines 55-66) Since both references are directed to insulation materials, the purpose disclosed by the '876 reference would have been recognized in the pertinent art of HIERS et al. ('622). It is noted that the use of the particular glass fibers claimed herein would have been obvious at the time the invention was made to a person having ordinary skill in the art since these are conventional glass fibers known to be used in insulating products.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the nonwoven mat and provide with pre-consolidation of the layers with the motivation of providing sufficient strength for handling as stated above.

8. Claims 6-8, 11-12, 14 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over HEIRS et al. as applied to claim 1 above, and further in view of HEIDEL et al. (US 5,171,629).

HEIRS et al. fail to teach the use of filaments in the nonwoven and while the use of a binder to consolidate the fiberglass mat is discussed by HEIRS, the reference does not specifically suggest the use of a water insoluble binder such as a melamine resin or an urea resin binder.

HEIDEL et al. discloses a carrier web that consists of a glass fiber mat and a mat of synthetic fibers, which are needled together and are end-consolidated with a polymer-free low-formaldehyde melamine-formaldehyde precondensate. (Abstract) The reference teaches that the glass fiber mat contained in the carrier web according to the invention can be preconsolidated using polymer binders or melamine resins. (Column 2, lines 13-17) With regards to claims 6, 11 and 12, the reference also teaches the use of polyester fibers in the synthetic fiber nonwoven and that it can be built up from staple fibers or from continuous fibers. Random nonwovens of



Art Unit: 1771

continuous fibers, in particular types which have undergone a certain pre-consolidation by a calendering process, such as, spun-bonded materials, are particularly preferred. (Column 2, lines 25-30 and lines 44-51)

To produce the carrier web the synthetic fiber nonwoven is needled to a glass fiber nonwoven, which is preconsolidated if appropriate, and is then impregnated by spraying, padding or dipping with an aqueous melamine-formaldehyde precondensate. (Column 3, lines 48-54) The reference teaches the use of their invention as a decoration carrier. (Column 4, line 4)

Since HEIDEL et al. is also directed composite webs, the purpose disclosed by HEIDEL would have been recognized in the pertinent art of HEIRS et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify the textile composite fabric and further provide it with a melamine resin binder with the motivation of improving the burning properties of the material and providing it with high flexibility as disclosed by HEIDEL et al. (Column 3, lines 31-34).

9. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over HEIRS et al. as applied to claim 1 above, and further in view of FREKENBURG et al. (US 4,569,088).

While HEIRS et al. teaches the use of mechanical needling to bond the mats, it fails to teach the use of hydrodynamic needling.

FRANKENBURG et al. teaches a protective garments that has an outer layer and an inner layer, and the inner layer is a durable fabric layer of non-fusible textile fibers. The reference teaches the use of fiberglass as the non-fusible fibers. (Col. 2, line 52; also refer to Fig.

Art Unit: 1771

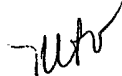
2) The reference teaches attaching (bonding) the outer layer and the inner layer by mechanical needling and also by hydraulic needling. (Refer to claims 4 and 5)

HEIRS et al. discloses the claimed invention except that it uses mechanical needling instead of hydraulic needling, FRANKENBURG et al. shows that hydraulic needling is an equivalent process known in the art. Therefore, because these two types of needling were art-recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the mechanical needling of HEIRS et al. for the hydraulic needling of FRANKENBURG et al.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Norca L. Torres-Velazquez whose telephone number is 571-272-1484. The examiner can normally be reached on Monday-Thursday 8:00-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on 571-272-1478. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Norca L. Torres-Velazquez  
Examiner  
Art Unit 1771

*August 17, 2004*